

WHAT IS CLAIMED IS:

1. A composite media file broadcasting program
broadcasting control system comprising:

an organizing unit generating and managing
organized schedule information map expressing program
frame and time frame of CM in the program frame as
broadcasting information;

a producing unit obtaining broadcasting schedule
information map based on said organized schedule
information map generated by said organizing unit,
assigning composite media file to be actually
broadcasted to each time frame expressed in said
broadcasting schedule information map and generating
composite media file modification schedule information
map and file updating schedule information map of each
file forming said composite media file;

a schedule control unit receiving said organized
schedule information map managed by said organizing unit,
said composite media file modification schedule
information map and said file updating schedule
information map held in said producing unit and
performing unitary management thereof; and

a broadcasting unit for broadcasting a
broadcasting data to a transmission line according to a
broadcasting schedule information provided from said
schedule control unit.

2. A composite media file broadcasting program
broadcasting control system as set forth in claim 1,
wherein

a storage device storing a program information,
5 a broadcasting schedule information map and a time
information; and

a trigger input device commanding modification
of said broadcasting data of the program on broadcasting
to said broadcasting unit.

10 3. A composite media file broadcasting program
broadcasting control system as set forth in claim 1,
wherein said organizing unit includes organized schedule
information map input means for inputting the program
5 information and the organized schedule information map
to said schedule control unit.

4. A composite media file broadcasting program
broadcasting control system as set forth in claim 1,
wherein said producing unit includes map input means for
inputting said composite media file modification
5 schedule information map and said file updating schedule
information map for each file forming said composite
media file to said schedule control unit.

5. A composite media file broadcasting program

broadcasting control system as set forth in claim 1,
wherein said broadcasting unit comprises:

unitary broadcasting schedule information map
5 generating means for obtaining said broadcasting
schedule information map and order information of time
identifiers used in said broadcasting schedule
information map obtained from said schedule control unit
and generating a unitary broadcasting schedule
10 information map;

broadcasting preparing means for performing
broadcasting preparatory process on the basis of said
unitary broadcasting schedule information map generated
by said unitarily broadcasting schedule information map
15 generating means; and

composite media file broadcasting means for
broadcasting a broadcasting data prepared per designated
broadcasting start timing.

6. A composite media file broadcasting program
broadcasting control system as set forth in claim 1,
wherein said schedule control unit comprises:

broadcasting schedule information map
5 registering means for univocally assigning a program
identifier to a program, storing attribute information
input from said organizing unit and program information
of the map of the program identifier, and generating
data broadcasting schedule information map and a time

10 object map from said broadcasting schedule information
map for storing in said storage device;
broadcasting schedule information map outputting means
for outputting said data broadcasting schedule
information map of the program to be object from input
15 program associated information; and

time information output means for outputting
order information on a time axis of the time object and
time object map.

7. A composite media file broadcasting program
broadcasting control system as set forth in claim 1,
wherein said storage device comprises:

5 program information storage portion for storing
program information;

broadcasting schedule information map storage
portion for hierarchically storing said broadcasting
schedule information map;

10 time information storage portion for storing
time object map and time object.

8. A composite media file broadcasting program
broadcasting control system as set forth in claim 2,
wherein said trigger input device comprises:

5 a plurality of broadcasting data modification
trigger input devices providing modification command of
the broadcasting data to said broadcasting unit upon

performing untime broadcasting.

9. A composite media file broadcasting program broadcasting control method in a composite media file broadcasting program broadcasting control system including an organizing unit managing program frame and time frame of CM in the program frame, producing unit generating a composite media file to be broadcasted and broadcasting schedule information, broadcasting unit performing broadcasting of broadcasting data to a transmission line according to information provided from said organizing unit and said producing unit, and a trigger input device designating modification of broadcasting data of the program on broadcasting to said broadcasting unit, said method comprising the steps of:
- setting pointer information to broadcasting schedule information map storing broadcasting start timing without setting real time value as broadcasting start timing of a plurality of said broadcasting schedule information map in hierarchy;
 - storing time object and attribute information thereof expressing one point on a time axis in the broadcasting schedule information map storing the broadcasting start timing;
 - enabling broadcasting preparatory process in said broadcasting unit even in a condition where broadcasting start timing is not fixed by expressing

order of time by time expressing function provided for
said time object; and

performing broadcasting instantly responding to
determination of broadcasting start timing during
broadcasting.

10. A composite media file broadcasting program
broadcasting control method as set forth in claim 9,
wherein a time identifier as identification information
of the time object is set in said broadcasting start
timing of said broadcasting schedule information and
expressing association on a time axis of different
broadcasting schedule information maps by using the same
time identifier when the same timing is expressed in
different broadcasting schedule information map.

11. A composite media file broadcasting program
broadcasting control method as set forth in claim 9,
wherein, in said time object, context of the time
objects on a time axis is expressed by three kinds of
times of time fixed type, range designation type and
offset designation type and discriminate the time not
known the context.

12. A composite media file broadcasting program
broadcasting control method as set forth in claim 11,
wherein the context of broadcasting start timing of

5 broadcasting schedule information at the same or
different hierarchical levels on the time axis by the
time object of range designation type and offset
designation type.

13. A composite media file broadcasting program
broadcasting control method as set forth in claim 9,
which uses kind of unit generated the time object, such
as organizing unit, producing unit or the like, kind of
5 time object, such as time fixed type, range designation
type and offset designation type, kind of trigger input
device determining a real time value for the time object
in range designation, and extending character string as
attribute information of the time object registered in
10 the time object map,

classifying broadcasting schedule information
determining broadcasting schedule information fixing
broadcasting start timing in said broadcasting unit,
broadcasting schedule information of not fixed time and
15 time are determined in association, and obtaining time
list to be determined by the trigger input device by
realizing classification function of the time object by
said attribute information.

14. A composite media file broadcasting program
broadcasting control method as set forth in claim 9,
wherein lump modification of time information is

realized by expressing only pointer information to the
5 time information without presenting real time value in
the broadcasting schedule information for facilitating
partial reusing of the composite media file broadcasting
program.

15. A composite media file broadcasting program
broadcasting control method as set forth in claim 11,
wherein the time object of time fixed type expresses a
time by real time value, said offset designation type
5 time object expresses time with the time identifier of
the objective time object and relative time from said
time object, and said range designation type time object
expresses the time with range start time value or the
time identifier of the time object using the range start
10 time value and range end value or the time identifier of
the range end time.

16. A composite media file broadcasting program
broadcasting control method as set forth in claim 9,
wherein said time object further includes an association
type expressing context of time objects on the time axis
5 by expressing the time with the time identifier of the
objective time object and start relative time and end
time in addition to three kinds of time objects of time
fixed type, range designation type and offset
designation type, and whereby discriminating the time

10 object unknown the context.

17. A composite media file broadcasting program
broadcasting control method as set forth in claim 16,
wherein the context of the broadcasting start timings of
the broadcasting schedule information of the same or
5 different hierarchical levels on the time axis by said
range designation type, offset designation type and
associated type time objects.

18. A composite media file broadcasting program
broadcasting control method as set forth in claim 16,
wherein said trigger input device for permitting user to
determined broadcasting start timing, presents time
5 range where the time becomes effective on a user
interface, by expressing the broadcasting start timing
of the broadcasting schedule information by the range
designation type and association type time object.

19. A composite media file broadcasting program
broadcasting control method as set forth in claim 16,
wherein said schedule control unit is provided with a
function for making judgment whether the aggregate of
5 four kinds of time objects of the time fixed type, range
designation type, offset designation type and
association type can be sorted in order of time or not,
and if sorted, utilizing topological sorting theory of

the order of the time object.

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20. A composite media file broadcasting program
broadcasting control method as set forth in claim 18,
wherein screen image modification timing to be provided
trigger from the trigger input device in a time range by
5 the time fixed type and range designation type time
object, said schedule control unit is provided with a
function for making judgment of order of the time
objects for enabling broadcasting of data broadcasting
program performed screen image modification.

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21. A composite media file broadcasting program
broadcasting control method as set forth in claim 19,
wherein screen image modification timing to be provided
trigger from the trigger input device in a time range by
5 the time fixed type, range designation type and offset
designation type time object, said schedule control unit
is provided with a function for making judgment of order
of the time objects for enabling broadcasting of data
broadcasting program performed screen image modification.

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22. A composite media file broadcasting program
broadcasting control method as set forth in claim 19,
wherein screen image modification timing to be provided
trigger from the trigger input device in a time range by
5 the time fixed type, range designation type and

association type time object, said schedule control unit is provided with a function for making judgment of order of the time objects for enabling broadcasting of data broadcasting program performed screen image modification.

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23. A composite media file broadcasting program broadcasting control method as set forth in claim 19, wherein four kinds of time objects of time fixed type, range designation type, offset designation type and association type are used for expressing screen image modification timing provided trigger by said trigger input device in a certain time range, expressing screen image modification timing for modifying screen image after a given period from trigger, and expressing screen image modification timing provided trigger from said trigger input device in a time range before a certain timing, and said schedule control unit is provided function for judgment of order of time object for enabling broadcasting of data broadcasting program with admixed screen image modification modes.

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24. A composite media file broadcasting program broadcasting control method as set forth in claim 9, which is provided function for designating condition utilizing attribute information of the time object registering the time object map, taking out partial aggregate of time object having attribute adapted to the

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condition from the aggregate of the time object of the
program and making judgment whether the time objects
forming the partial aggregate can be sorted in order of
time or not and order of time object as can be sorted.

25. A composite media file broadcasting program
broadcasting control method as set forth in claim 24,
which uses kind of unit generated the time object, such
as organizing unit, producing unit or the like, kind of
time object, such as time fixed type, range designation
type and offset designation type, kind of trigger input
device determining a real time value for the time object
in range designation, and extending character string as
attribute information of the time object registered in
the time object map, classifying broadcasting schedule
information determining broadcasting schedule
information fixing broadcasting start timing in said
broadcasting unit, broadcasting schedule information of
not fixed time and time are determined in association,
and obtaining time list to be determined by the trigger
input device by realizing classification function of the
time object by said attribute information.

26. A composite media file broadcasting program
broadcasting control method as set forth in claim 25,
wherein broadcasting data is broadcasted instantly
responding to the timing of trigger by enabling

5 broadcasting preparatory process even for the portion
where the judgment of order is possible by dividing the
program into a plurality of time zones upon organization
and production even in the program, in which judgment of
order of time of the time object can be made and the
10 portion judgment of the order of time of the time object
is not possible, by using the time classification code
of the attribute information of the time object
registered in the time object map.

27. A composite media file broadcasting program
broadcasting control method as set forth in claim 13,
wherein as the attribute information of the time object
to be registered in the time object map, kind of the
5 time object is provided for enabling handing of time
objects having different data structure in single time
object map with maintaining accessibility of particular
kind of time object.

28. A composite media file broadcasting program
broadcasting control method as set forth in claim 27,
wherein the time object expressing one point on the time
axis in various mode is handled with single time object
5 map in a lump, an attribute for discriminating kind of
the time object in the time object map to handle the
screen image modification timing with the identifier as
a common item to be provided in respective time object

For the purpose of the present invention

in the data broadcasting schedule information map, to
10 define the time object having new data structure when
the time expressing not premised in the screen image
modification timing for adaptation without requiring
modification of the data broadcasting schedule
information map.

15 29. A composite media file broadcasting program
broadcasting control method as set forth in claim 9,
wherein said schedule control unit has a function for
outputting data broadcasting schedule information, in
5 which when the order of the time object is determined,
the schedule control unit takes the time indicated by
each time object as the broadcasting start timing, for
facilitating generation of the unitary broadcasting
schedule information map from the time object map.

10 30. A composite media file broadcasting program
broadcasting control method as set forth in claim 9,
wherein said broadcasting unit includes a function for
designating a plurality of variations of order of
5 aggregates of the time objects as demanding order of the
aggregates of the time object to the schedule control
unit, when the order of the aggregates of the time
objects is judged by said schedule control unit, if some
candidates of the order are present, and if number of
10 the candidates falls within a designated number,

broadcasting preparation process corresponding to all
candidates are performed by the broadcasting by
providing a function for outputting all candidates, when
the time of the time object is fixed by trigger and
15 order of the aggregates of the time objects is fixed, by
selecting the broadcasting data corresponding to the
fixed order from the prepared broadcasting data for
enabling instantly broadcasting the broadcasting data
without performing broadcasting preparation process for
20 broadcasting of the broadcasting data instantly
responding to the trigger timing.

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